



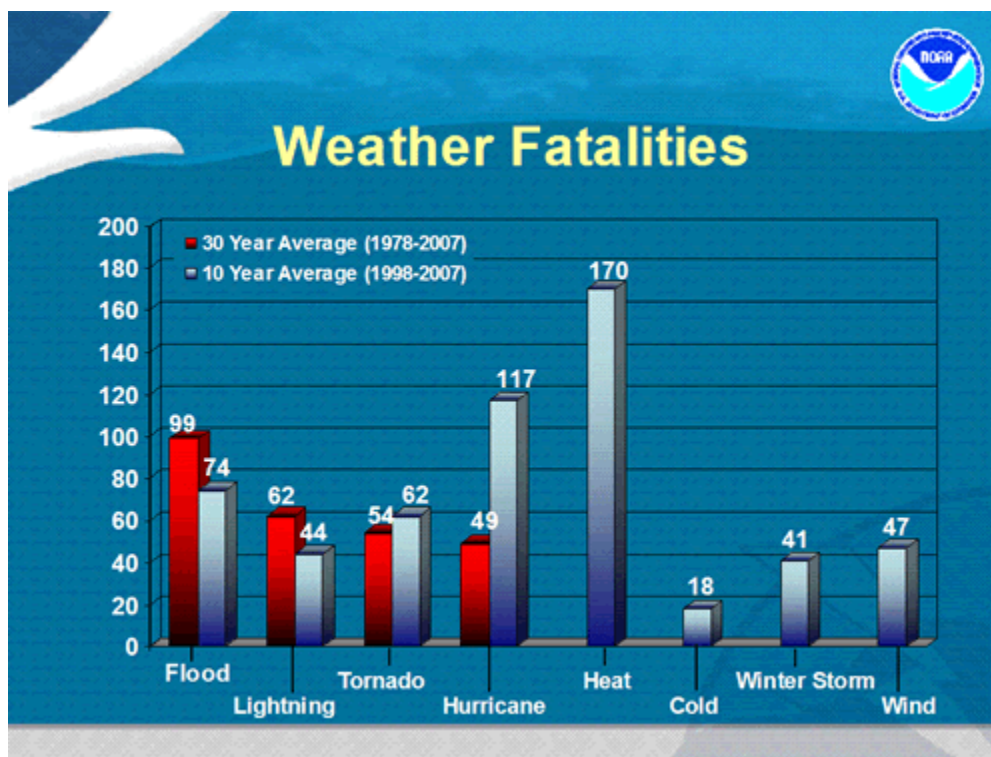
Heat Stress

What is Heat Stress?

- **Heat stress** is the buildup in the body of heat generated by the muscles during work and of heat coming from warm and hot environments. **Heat exhaustion** and **heat stroke** result when the body is subjected to more heat than it can cope with.

Severe Weather Fatalities

“...heat is by far the number one killer of all weather events...”



Water Loss

- ☐ Normally, with light activity, your body loses 2 to 3 quarts of water daily.
- ☐ In a hot weather environment, you lose 6 to 8 quarts of sweat which is critical to your body's cooling system.
- ☐ Your thirst mechanism is not sensitive enough to be an accurate indicator of your body's needs.
- ☐ Encourage workers to drink water-about 5 to 7

WBGTI

The **Wet-Bulb Globe Temperature Index (WBGTI)** takes into account four variables: air temperature, humidity, radiant heat and air movement. This reading gives a more accurate measurement than any one reading alone.

Heat related illness includes: heat rash, cramps, exhaustion and stroke. These illnesses are a real danger to people not accustomed to the stress of hot weather exercise.



Responsibilities



Boone Branch Medical Clinic

- Develop policy and oversight program
- Determine WBGTI and Heat Stress Flags
- Inform OOD/CDO, EWTGLANT and NIOC of appropriately colored flag
- (OOD/CDO inform NABLC XO, Security and MWR for Black Flag/ signs)



NABLC Departments and Tenants

- Establish activity heat stress monitoring procedures
- Monitor heat levels (telephone/ flags/signs)
- Restrict physical activity if appropriate

Ref: NAVMED P-5010/ NABLC INST
6110.3A

Heat Stress Flag Colors

Recorded message
953-8364

Emergency
462-4444

Above 90

Black- Wet Bulb Globe Thermometer (WBGT) index of **90° or Above**. Physical training and strenuous exercise must be suspended for all personnel. (excludes operational commitment not for training purposes).

88 - 89.9

Red- WBGT index of **88 - 89.9°**. Strenuous exercise must be curtailed for all personnel with less than 12 weeks training in hot weather.

85 - 87.9

Yellow- WBGT index of **85 - 87.9°**. Strenuous exercise and activity must be curtailed for new and unacclimatized personnel during the first 3 weeks of heat exposure. Outdoor classes in the sun must be avoided when the WBGT Index exceeds 85.

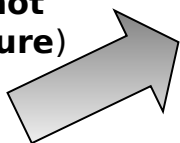
80-84.9

Green- WBGT index of **80 - 84.9°**. Discretion is required in planning heavy exercise for unacclimatized personnel. This is a marginal heat stress limit for all personnel.

Less than 80

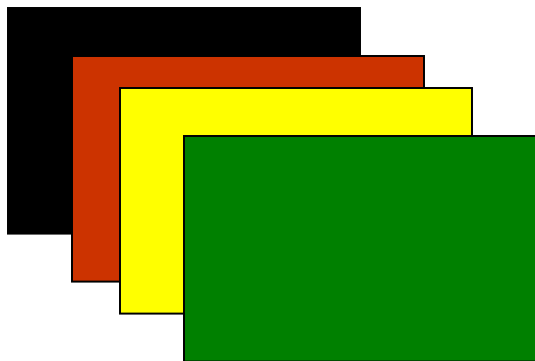
White - Extreme intense physical exertion may precipitate heat exhaustion or heat stroke, therefore, caution should be taken.

(numbers are **Wet Bulb
Globe Temperature
Index- not
temperature**)



Wearing body armor or NBC protective uniforms adds approximately 10 points to measured WBGT. Limits of exposure should be adjusted accordingly.

Flags / Signs Displayed



Flags displayed

**Sulinski Field
EWTGLANT Bldg. 3504**

Recorded Message

(757) 953-8364

Signs displayed (black flag only)

Information Available

NAB LC Quarterdeck- 462-7385 (Mon-Fri)

NABLC CDO- 438-3930 (Sat-Sun)

**Pierside Gym (inside)
Rockwell gym
Eagle Haven Golf Course**

Emergency

462-4444

Reporting Requirements

A detailed medical report form titled "HEAT/COLD INJURY REPORT" (NAVFORM 6500/1). The form includes sections for patient information, incident details, medical history, and treatment. It is designed for use by medical personnel to document heat or cold-related injuries.

All diagnosed heat injuries must be reported to the Navy Environmental Health Center (NEHC) on NAVMED Form 6500/1, Heat/Cold Injury Report

<http://www.safetycenter.navy.mil/OSH/forms/files/heat-cold.pdf>

A form titled "SUPERVISOR'S REPORT OF CIVILIAN/ MILITARY ON-DUTY/OFF-DUTY INJURIES/ ILLNESSES/ DEATHS". It contains fields for reporting incidents involving personnel, including details about the incident, the individual involved, and the outcome. The form is used by supervisors to document and report safety incidents.

Supervisors' Report Of Civilian/ Military On-duty/Off-duty Injuries/ Illnesses/Deaths

Use ESAMS or contact the NABLC Safety Office



Heat Stress Illnesses **Heat Rash** (prickly heat)

Causes: Heat rash normally happens most often in hot, humid conditions, where sweat is not easily removed from the surface of the skin by evaporation. Fair skinned individuals are more prone to develop heat rash.

Symptoms: Interferes with sleep and results in decreased deficiency and cumulative fatigue. Heat rash looks like a red cluster of pimples or small blisters. It is more likely to occur on the neck, upper chest, groin area, buttocks, under breasts and in the elbow creases.

Treatment: Treated by keeping skin dry and rest in a cool place. Dusting powder and calamine lotion may be used to increase comfort.



Heat Stress Illnesses **Heat Cramps** (mild case)

Causes: This normally happens after exercise. Most often to people who aren't used to the heat, who sweat a lot or don't drink enough fluids. This sweating depletes the body's salt and moisture. The low level of salt in the muscles might be the reason for heat cramps.

Symptoms: Severe muscle pain and cramps in legs, arms, and abdomen. Profuse sweating.

Treatment: Increase fluid intake, increase salt intake, rest in a cool dry place.



Heat Stress Illnesses Heat Exhaustion (more severe)

Causes: This is caused by the loss of body fluids and important salts due to overexposure to high temperatures and humidity. Usually you are exposed to heat for a prolonged amount of time, such as standing in formation, and you become dehydrated.

Symptoms: Heavy sweating, muscle cramps, headache, weakness, nausea, fatigue, dizziness, skin is cool and pale, pupils become dilated. Victim is usually conscious but may faint, has a core temperature of over 102.

Treatment: Get to the shade, cool off, increase fluids, cold wet towels or ice, fan, elevate legs above heart, loosen clothing, don't give any liquids containing alcohol or caffeine, may need IV. Seek medical attention immediately if symptoms worsen or last longer than 1 hour. If left untreated Heat Exhaustion can lead to HEATSTROKE.



Heat Stress Illnesses **Heat Stroke** (most severe)

Causes: Heat stroke occurs when the body is unable to regulate its temperature. The body's temperature rises rapidly. The sweating mechanisms fails and the body is unable to cool. It is a medical emergency and a life threatening condition.

Symptoms: Headache, nausea, dizziness, skin is red, dry and very hot (sweating has ceased). Pulse is strong and rapid, small pupils, high fever 103. May be disorientated, lose consciousness, possible convulsions.

Treatment: Remove to cooler location, loosen clothing, immerse in cool water, wrap in wet sheets, cold compresses to the head, neck and groin. **SEEK MEDICAL ATTENTION IMMEDIATELY. DO NOT** give medication to lower fever, **DO NOT** use an alcohol rub.

Warning Signs

Every year people pass out and some even die during exercise from heat stroke. But you do get plenty of warning.

First your muscles are affected, as your temperature rises they feel like a hot poker is pressing against them.

As your temperature rises further, the air you breathe feels like it is coming from a furnace and no matter how hard you try, you can't get enough air.... STOP EXERCISING. Take a break and drink fluids.

If you continue, your body temperature will rise further and affect your brain. Your head will start to hurt, you will hear ringing in your ears, you will feel dizzy and may have difficulty seeing, and the next step is unconscious on the ground.

**SO BE SMART WHEN YOU EXERCISE-
know your limits and drink plenty of fluids.**

How to Protect Workers

- ☐ With some basic precautions, many heat related injuries and deaths can be prevented
- ☐ Learn the signs and symptoms of heat-induced illnesses and what to do to help the worker
- ☐ Train the workforce about heat-induced illnesses
- ☐ Perform the heaviest work in the coolest part of the day

How to Protect Workers (con't)

- ☐ Slowly buildup tolerance to the heat and activity (about 2-3 weeks)
- ☐ Use the Buddy System
- ☐ Drink plenty of cool water (one small cup every 15-20 minutes)

How to Protect Workers (con't)

- ☐ Wear light loose-fitting, breathable clothing (like cotton)
- ☐ Take breaks in cool shaded areas
- ☐ Avoid eating large meals before working in hot environments
- ☐ Avoid caffeine and alcohol (these beverages make the body lose water and increase your risk for heat illnesses)

Final Notes

- ❑ **Know your people-** People who have suffered a heat injury in the past will be more susceptible, and people with certain medical conditions (i.e.; obesity, high blood pressure, heart disease, pregnancy) or on certain medications (diuretics) will be at greater risk of heat injury.
- ❑ **Children** Heat stroke can affect your children as well. With toddlers/babies heat stroke can occur quickly, during long rides in a closed vehicle or being dressed too warmly. Older children are also susceptible.
- ❑ Follow the same procedures as with an adult, cool them off, sponge them down, bring their temperature down as quickly as possible but DO NOT use TYLENOL. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

NABLC Contacts

Bldg. 1602

Safety Office

(757) 462-7761

**Emergen
cy**

462-4444

Bldg. 3505

Boone Clinic

Preventive Medicine

(757) 953-8256

Heat Stress Resources:

<https://cnic.navy.mil/cnrma/Programs/Safety/heatstress>